

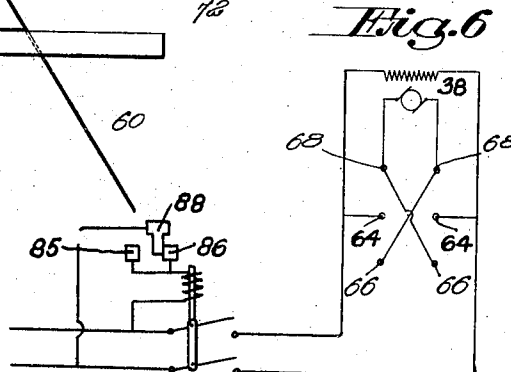
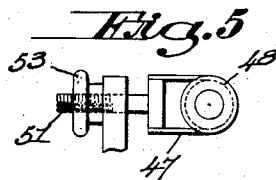
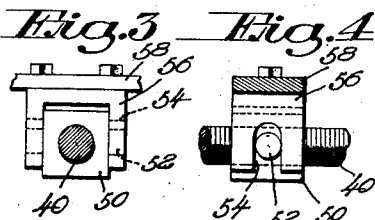
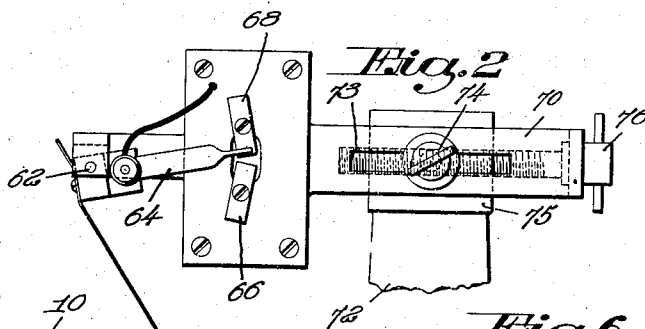
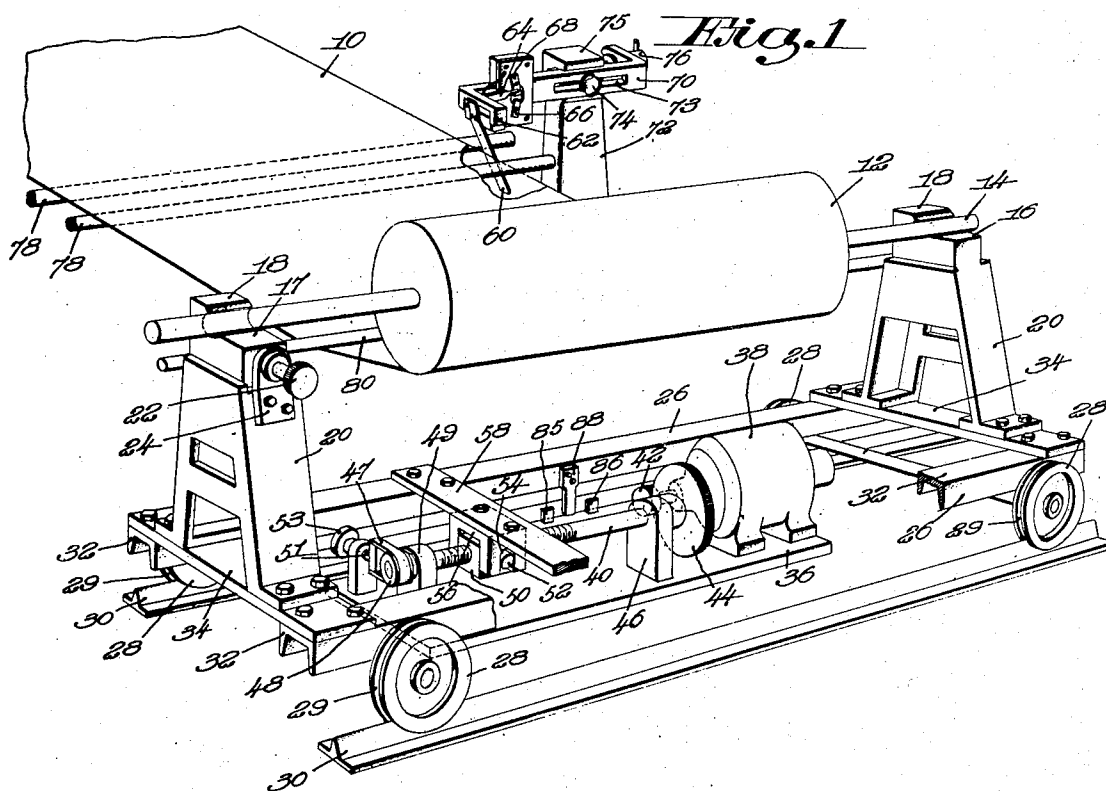
Feb. 6, 1934.

G. B. QUINBY

1,945,981

APPARATUS FOR HANDLING WEBS OF CLOTH

Filed Feb. 4, 1930



Witness

Frederick S. Grunberg

Inventor

George B. Quinby
By his Attorney
Van Curen Fishbein & Hays

UNITED STATES PATENT OFFICE

1,945,981

APPARATUS FOR HANDLING WEBS OF CLOTH

George B. Quinby, Medford, Mass., assignor to
Blake Electric Mfg. Company, Boston, Mass.,
a corporation of Massachusetts

Application February 4, 1930. Serial No. 425,767

2 Claims. (Cl. 242—76)

The present invention relates to improvements in apparatus for handling webs of cloth, paper or similar material.

The purpose of the present invention is to provide mechanism acting automatically to insure the delivery in a predetermined manner of a web of cloth, paper, or similar or equivalent material to a slitting machine, tentering frame or similar apparatus. According to the usual practice, this web of cloth or paper is preliminarily wound upon a roll or core for facilitating transportation and delivery to the operating mechanism, and without some form of automatic control, there is no method of insuring the delivery of the web in a predetermined manner to the slitting machine or its equivalent. I propose to control the delivery of the web in a predetermined path by providing a feeler in continuous engagement with the edge of the web in proximity to the receiving mechanism, and operating connections controlled by the position of the feeler for bodily shifting the roll from which the web is delivered in a direction transverse to the feed for the purpose of rectifying variations in the path of movement which may occur in either direction. In the simplest and most efficient form of the invention which has yet been devised, the roll is mounted upon a transversely movable carriage directly connected with a reversible motor, the operation of which is controlled from the position of the feeler, the motor rotating in either of two directions depending upon the movement of the feeler in opposite directions beyond the neutral point. I furthermore propose to maintain that portion of the web in proximity to the feeler in a reasonably taut condition to insure accurate gaging of the web position by the contacting feeler.

In the accompanying drawing illustrating the preferred form of the invention,

Fig. 1 represents a perspective view of my improved apparatus;

Fig. 2 is an elevation partially in section of the feeler and connected switch box;

Figs. 3 and 4 are details illustrating the connection between the lead screw and nut for imparting motion of the lead screw to the laterally movable carriage;

Fig. 5 is a detail illustrating the braking device for preventing overrunning of the lead screw; and

Fig. 6 is a diagrammatic view of the reversible motor connections.

In the illustrated embodiment of the invention a web, indicated at 10 is wound upon a de-

livery roll 12 supported upon a shaft 14 which is loosely and releasably mounted at opposite ends in open bearings 16 and 17 provided with upwardly extending portions 18 designed to resist the thrust of the shaft, due to withdrawal of the web therefrom. In the usual practice, the shaft 14 is provided with some form of braking mechanism (not shown) for placing a drag upon the web as it is withdrawn for the subsequent operations. Each of the bearings is mounted at the upper end of a standard 20, and at one end the bearing is adjustable with relation to the standard by virtue of a hand-operated screw 22 journaled in a bracket 24 mounted on the standard. By virtue of this adjustment the position of the bearing supports may be altered to place the roll shaft exactly normal to the path of delivery of the web or slightly inclined thereto in order to compensate for non-uniformity of opposite edges as may be desired. The standards 20 are rigidly supported at opposite ends of a carriage 26 with sufficient separation to permit receiving the widest web which may be encountered in practice. The carriage is supported upon wheels 28 which are provided with grooved peripheries 29, mounted upon guide rails 30, arranged to permit movement of the carriage laterally or transversely to the length of the web and to preclude shifting of the carriage in a direction lengthwise of the web.

The carriage, as indicated particularly in the drawing, comprises essentially separated channel members 32 connected at opposite ends by cross braces 34. Supported upon a stationary base 36 is a reversible motor 38, which is connected with an operating lead screw 40 through reducing gears 42 and 44. The lead screw is mounted at the adjacent motor end in bearing block 46 and at its opposite end in a second bearing block 49, as indicated more particularly in Fig. 1. Supported upon the lead screw and traveling thereon is an operating nut 50 providing with trunnions 52 which engage the downwardly directed open ended slots 54 formed on opposite sides of a connecting bracket 56 mounted upon a cross member 58. By virtue of this construction a quickly disconnectible connection is provided and a slight swivelling movement of the lead screw with respect to the carriage may be obtained without binding or cramping of the operating mechanism. This permits the proper assembly of the apparatus even though slight irregularities may be present in the floor, the supporting base 36 for the motor and the guide rails 30 for supporting the carriage being mounted independently of one

another on the usual mill floor. The lead screw at its free end is connected with a simple form of friction brake, comprising a strap 47 which surrounds a head or drum 48, the tension on the strap being controlled through a threaded member 51 adjustable through a hand nut 53. Provision of this braking mechanism prevents over-running of the motor after the circuit has been opened through movement of the feeler. With this construction it will be evident that rotation of the motor in either direction imparts a corresponding rotation at a lower speed to the lead screw which, in turn, traverses the traveling nut 50 longitudinally thereon, imparting a corresponding movement to the carriage and supported roll.

The movements of the motor are controlled by a depending feeler finger 60 which is in constant contact with the edge of the web in proximity to the slitting or equivalent machine. This feeler finger is pivoted at 62 and carries a pair of movable electrical contacts 64 which are adapted to engage with either one of two pairs of stationary contacts 66 or 68, depending on the movement of the feeler in opposite directions. The feeler is so designed that it is maintained in continuous engagement with the edge of the web, and follows the movements thereof irrespective of direction. With this construction, a movement of the contact 64 into engagement with either of the stationary contacts actuates the motor 38 in a direction depending upon which contact is closed to impart a shifting movement to the web. The feeler mechanism is provided with a supporting arm 70 which is adjustably connected with a post 72 which may form a part of the slitting or equivalent machine. As noted, the arm 70 is provided with a slot 73, and is clamped to the post through a wing nut 74. Upon loosening the wing nut the arm may be bodily adjusted with respect to a supporting head 75 by an adjusting screw 76, all as shown more particularly in Fig. 2. The web is supported at opposite sides of the feeler by guide rolls 78 extending therebeneath, and is also and preferably engaged by a guide bar 80 after delivery from the roll 12. This construction insures a taut condition of the web edge in proximity to the feeler. Furthermore, the capacity for adjustment of the feeler mechanism as a

whole permits the control to be readily regulated for webs of varying width.

In order to prevent damage to the operating mechanism in the event that the feeler control becomes inoperative, I provide stationary contacts 85 and 86, preferably connected to the base 36 or to the floor, and adapted to be engaged at opposite limits of travel of the carriage by a contact 88 mounted upon the carriage and depending therefrom. This construction is designed to open the motor circuit and stop rotation of the motor at opposite designated limits of travel of the carriage before the lead screw and its connected parts can become damaged through possible overrunning of the motor, due to failure of the control mechanism to operate.

In some instances it may be desired to embody my new mechanism in connection with web-holding receiving rolls adapted to have a web of cloth, paper, or similar material wound thereon, and in such cases it is to be clearly understood that the invention is not confined in this application to its combination with a roll from which a web is unwound.

What is claimed is:

1. Web-handling apparatus comprising a carriage-oppositely-disposed standards upon the carriage, guideways upon which the carriage is mounted for movement in opposite directions, bearings formed on the standards, a web roll, a shaft extending through the roll and having its ends releasably journaled upon the bearings, a stationary motor, and connections between the motor and the carriage including a member moving with the carriage and having an open ended slot and a projection cooperating with the slot for actuating the carriage in opposite directions on the guideways.

2. Web-handling apparatus comprising a web-handling roll, a carriage supporting the roll, means for guiding the carriage in the direction of the axis of the roll, a stationary motor, a lead screw operated by the motor, a nut threaded on the lead screw, a trunnion formed on the nut and a cooperating slotted member fixed to the carriage for preventing binding of the nut on the lead screw throughout the path of movement of the carriage.

GEORGE B. QUINBY.